

Memorandum

To: MR. ANDRE H. BOUTROS, CHIEF
Division of Engineering Services
Office of Specially Funded Projects, MS-12

Attention: Norbert Gee

Date: January 17, 2002

File: 11-172871
11-SD-56-KP 4.76 (MP 2.97)



Gonzales Creek On-Ramp
Bridge No. 57-1078K and
Gonzales Creek Off-Ramp
Bridge No. 57-1078S

From: DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING
SERVICES
Geotechnical Services
Office of Geotechnical Design South - MS 5

Subject: Amended Foundation Recommendations #2

The purpose of the "amended" Foundation Recommendations #2 is to address design changes that were made by the consultant designer on the plan sheets that differ from the "original" Foundation Recommendations and the "amended" Foundation Recommendations (dated June 11, 2001 and September 20, 2001, respectively). The plan sheets that were reviewed by our office (Office of Geotechnical Design South, Structure Foundations Branch South) were the General Plans and Foundation Plans for the proposed Gonzales Creek On-Ramp, Bridge No. 57-1078K (dated 10-8-01) and the Gonzales Creek Off-Ramp, Bridge No. 57-1078S (dated 10-5-01). Item #1 (discussed below) is a design issue that needs to be changed within the "amended" Foundation Recommendations (dated September 20, 2001) for the proposed of the Gonzales Creek On-Ramp (Bridge No. 57-1078K). Item # 2 is a design issue that needs to be addressed by the consultant structural designer, so that plan sheets match the "amended" Foundation Recommendations (dated September 20, 2001). The changes were requested from the Office of Special Funded Projects (OSFP) in a letter along with plan sheets that were received on December 27, 2001. T.Y. Lin International is the consultant firm in charge of the design of these structures. The two items to be changed are as follows.

1. At the Bent 2 location for the Gonzales Creek On-Ramp (Bridge No. 57-1078K), the bottom of footing elevation was lowered due to a design change shown on the Foundation Plan (dated October 8, 2001). At the Bent 2 location for the Gonzales Creek On-Ramp, the bottom of footing elevation shall be located on undisturbed, formational earth materials (as discussed in the "original" foundation recommendations). At the Bent 2 location for the Gonzales Creek

On-Ramp, if the bottom of footing elevation is lowered or raised by 1.0 meters then the foundation recommendations contained in this report are still valid and our office does not need to be contacted for re-evaluation. All changes mentioned above are detailed below in Table 1.

Table 1: Spread Footing Data: Gonzales Creek On-Ramp (Br. No. 57-1078K)

Support Location	Minimum Footing Width	Bottom of Footing Elevation ³	Recommended Soil Bearing Pressures	
			ASD (1)	LFD (2)
			Gross Allowable Soil Bearing Pressure (q_{all})	Ultimate Soil Bearing Pressure (q_{ult}^*)
Bent 2 (On-Ramp Bridge)	6.0 m	42.48 m	N/A	720 kPa (15.0 ksf)

Notes: 1) Allowable Stress Design, (ASD). The Maximum Contact Pressure, (q_{max}), is not to exceed the recommended Gross Allowable Soil Bearing Pressure, (q_{all}). The Ultimate Soil Bearing Capacity, (q_{ult}), will equal or exceed 3 times the recommended Gross Allowable Soil Bearing Pressure, (q_{all}).
 2) Load Factor Design, (LFD). The Maximum Contact Pressure, (q_{max}), divided by the Strength Reduction Factor, (ϕ), is not to exceed the recommended Ultimate Soil Bearing Pressure, (q_{ult}^*). The Ultimate Soil Bearing Capacity, (q_{ult}), will equal or exceed the recommended Ultimate Soil Bearing Pressure, (q_{ult}^*).

- At the Bent 3 location for Gonzales Creek On-Ramp (Bridge No. 57-1078K), the consultant structural designer shall change the pile data table shown on the General Plan (dated October 8, 2001), so that the values are consistent with Memo's to Designers, 3-1.

The recommendations contained in this report are based on specific project information regarding design loads and structure locations that have been provided by OSFP. The Foundation Recommendations, "General Notes" and "Construction Considerations" detailed in the "original" Foundation Recommendations (dated June 11, 2001) and the "amended" Foundation Recommendations (dated September 20, 2001) for the proposed Gonzales Creek On-Ramp (Bridge No. 57-1078K) and Gonzales Creek Off-Ramp (Bridge No. 57-1078S) Bridges are still applicable with the addition of the above mentioned foundation recommendations contained in this report. If any conceptual changes are made during final project design, the Office of Geotechnical Design - South, Structure Foundations Branch - South should review those changes to determine if these foundation recommendations are still applicable.

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Any questions regarding the above recommendations should be directed to the attention of Hector Valencia (916) 227-7081 (CALNET 498-7081) or Mark DeSalvatore (916) 227-7056 (CALNET 498-7056), Office of Geotechnical Design - South, Structure Foundations Branch - South.

Memorandum by:

Supervised by:

Date: 1/17/02



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- c: R.E. Pend. File - Struc Const
- DBarlow - Specs & Estimates
- TRuckman - Specs Dev
- OAlcantara - Proj. Mgmt.
- LHuynh - PCE
- CSavage - District 11
- RHillman - District 11
- JChai - OGDS
- AAbghari - OGEE
- JRucker - TY Lin (San Diego)
- Geology Bridge File-Sac
- Geology Bridge File-LA
- RGES.31